REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, and 5-8 are presently active in this case, Claims 1 and 2 having been amended and Claims 5-8 having been added by way of the present Amendment. Care has been taken such that no new matter has been added. (See, e.g., page 2, line 16, through page 4, line 19.)

In the outstanding Official Action, the disclosure was objected to for minor informalities. The specification has been amended to add headings and the Abstract of the Disclosure has been replaced with a new Abstract of the Disclosure that does not include "et." Accordingly, the Applicants request the withdrawal of the objection to the disclosure.

Claims 1 and 3 were rejected under 35 U.S.C. 102(b) as being anticipated by Vincent et al. (DE 199 33 988 A 1). Claims 2 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vincent et al. For the reasons discussed below, the Applicants request the withdrawal of the above art rejections.

In the Office Action, the Vincent et al. reference is indicated as anticipating independent Claim 1. The Applicants note that a claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference. As will be demonstrated below, the Vincent et al. reference clearly does not meet each and every limitation of independent Claim 1.

Claim 1 of the present application recites a method for regeneration of a particulate filter situated on an exhaust line of an engine. The method comprises determining a soot

burden on the filter based on knowledge of a differential pressure ΔP at ends of the filter and of a pressure Pupstream upstream from the filter and triggering combustion of the soot when the burden reaches a predetermined level, wherein a pressure Pdownstream downstream from the filter is modeled without use of a pressure sensor and Pupstream is determined without use of a pressure sensor using the relationship Pupstream = ΔP + Pdownstream. The Applicants submit that the Vincent et al. reference does not disclose all of the above limitations.

The present invention advantageously provides a method and device for regeneration of a particulate filter in which the burden on the filter can be effectively evaluated based on the measurement of the differential pressure at ends of the filter without the use of an additional pressure sensor to measure the pressure upstream of the filter or an additional pressure sensor to measure the pressure downstream of the filter. Thus, the present invention reduces the cost and complexity of the method and device by eliminating the need for these additional sensors, while maintaining accurate and efficient regeneration of the particulate filter.

The Vincent et al. reference describes a method and device for determining the soot load of a particulate filter. The Vincent et al. reference describes a method and device for determining the soot load that includes several embodiments, all of which include the measurement of at least two pressures in the system. For example, the Vincent et al. reference describes the measurement of the differential pressure between the upstream part (10a) and the downstream part (10b) of the filter (10) using sensor (12). (Page 7, lines 17-20, of the English translation of DE 199 33 988 A 1 provided herewith.) In addition to the

measurement of the differential pressure, the Vincent et al. reference describes that either the upstream pressure or the downstream pressure must also be measured in order to find the upstream pressure for use in equation II. (See page 8, lines 17-22, of the English translation.) The Vincent et al. reference suggests that either an upstream pressure sensor is provided to directly measure the upstream pressure for use in equation II, or the atmospheric pressure can be measured and used as the downstream pressure and the upstream pressure can therefore be calculated using equation III with the downstream pressure and the differential pressure measured by sensor (12). The Vincent et al. reference also suggests an alternative embodiment on page 7, lines 25-29, of the English translation, in which both an upstream pressure sensor and a downstream pressure sensor can be used instead of sensor (12) and equation II can then be used to calculate the differential pressure. However, in each of the above instances, two pressure measurements are used and thus two pressure sensor are required.

The Vincent et al. reference does not disclose or even suggest a method or device in which a soot burden on the filter is determined based on knowledge of a differential pressure ΔP at ends of the filter and of a pressure Pupstream upstream from the filter, wherein a pressure Pdownstream downstream from the filter is modeled without use of a pressure sensor and Pupstream is determined without use of a pressure sensor using the relationship Pupstream = ΔP + Pdownstream. In each of the configurations discussed in the Vincent et al. reference, either an upstream pressure sensor is required, or a downstream pressure sensor is required. Thus, the Applicants submit that the Vincent et al. reference does not disclose all of

the limitations recited in independent Claim 1 of the present application. Accordingly, the Applicants respectfully request the withdrawal of the anticipation rejection of Claim 1.

Furthermore, newly added Claim 5 recites a device comprising a differential pressure sensor configured to determine a differential pressure ΔP at ends of the filter, and a controller configured to determine a soot burden on the filter based on knowledge of the differential pressure ΔP and of a pressure Pupstream upstream from the filter and configured to trigger combustion of the soot when the burden reaches a predetermined level, wherein a pressure Pdownstream downstream from the filter is modeled without use of a pressure sensor and Pupstream is determined without use of a pressure sensor using the relationship Pupstream = ΔP + Pdownstream. And, Claim 7 recites a motor vehicle comprising, among other features, a device comprising a differential pressure sensor configured to determine a differential pressure ΔP at ends of the filter, and a controller configured to determine a soot burden on the filter based on knowledge of the differential pressure ΔP and of a pressure Pupstream upstream from the filter and configured to trigger combustion of the soot when the burden reaches a predetermined level, wherein a pressure Pdownstream downstream from the filter is modeled without use of a pressure sensor and Pupstream is determined without use of a pressure sensor using the relationship Pupstream = ΔP + Pdownstream. Thus, these claims are also allowable over the Vincent et al. reference.

The dependent claims are considered allowable for the reasons advanced for the independent claim from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed nor suggested by the applied references when those features are considered within the context of their respective

independent claim.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

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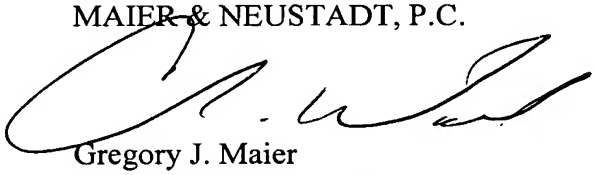

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